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Doping dependence of the normal-state Hall coefficient in YBCO DAVID LEBOEUF, NICOLAS DOIRON-LEYRAUD, FRANCIS LALIBERTÉ, OLIVIER CYR-CHOINIÈRE, RAMZY DAOU, LOUIS TAILLEFER, BAPTISTE VIGNOLLE, JULIEN LEVALLOIS, CYRIL PROUST, B.J. RAMSHAW, D.A. BONN, W.N. HARDY, RUIXING LIANG, L. BALICAS, Y.J. JO, U DE SHER-BOOKE TEAM, LNCMI-TOULOUSE TEAM, U OF BRISTISH COLUMBIA TEAM, NHMFL-TALLAHASSEE TEAM — We report on the doping dependence of the normal-state Hall coefficient $R_{\rm H}(T)$ in the high-Tc superconductor YBa₂Cu₃O_y for 0.08 < p < 0.15, measured in magnetic fields up to 60 T. $R_{\rm H}(T)$ is seen to drop below a temperature $T_{\rm H}$, to become negative at low temperature, as previously reported for two dopings (1). We attribute this drop to a reconstruction of the Fermi-surface caused by the onset of broken translational symmetry, which produces an electron-like pocket in the Fermi surface of underdoped YBCO. The fact that $T_{\rm H}$ peaks at p = 1/8 strongly suggests that Fermi-surface reconstruction is caused by stripe order. (1) D. LeBoeuf et al., Nature 450, 533 (2007).

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